

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (CURRENTLY AMENDED) Robot rack loading apparatus for temporary rack storage of panel assemblies, said apparatus comprising:

- a rack for storage of multiple assemblies, the rack including side and bottom dunnage including slots for receiving individual assemblies in separate sets of said slots and a sensing hole adjacent one of the slots of each set;

- a robot end of arm tool mountable on a robot arm and adapted for sequentially carrying individual assemblies for loading into the rack, said tool including a first sensor for sensing the sensing hole indicating the proper location of the robot arm for loading the assemblies component into the associated set of slots; and

- a compliant support between the robot arm and the tool and allowing limited compliant positioning of the tool by the component to allow low stress self-adjustment of the assemblies component position during loading of the assemblies component into the slots of the selected set.

2. (CURRENTLY AMENDED) Apparatus as in claim 1 wherein the compliant support includes a lock for fixing the position of the compliant support for at least one of loading, pickup, and carrying of the assemblies by the tool prior to loading of the assemblies into the rack.
3. (ORIGINAL) Apparatus as in claim 1 wherein the slots in the side dunnage include lead-in angles around the upper peripheries of the slots to guide the assemblies into their proper positions upon insertion into the slots.
4. (ORIGINAL) Apparatus as in claim 1 including a second sensor on said tool for sensing an object limiting forward travel of the tool to indicate a preload position of the tool.
5. Cancelled
6. Cancelled
7. Cancelled
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10. (PREVIOUSLY PRESENTED) A robot rack loading apparatus for temporary rack storage of panel assemblies, the apparatus comprising:

a rack for storage of multiple panel assemblies, the rack including side and bottom dunnage having slots for receiving individual assemblies;

a tool mountable on a robot arm and adapted for sequentially carrying individual assemblies for loading into the rack; and

a lockable compliant support between the robot arm and the tool, the lockable compliant support having a compliant mode and a locked mode, wherein the tool moves relative to the robot arm in the compliant mode in response to self-adjustment of the individual assemblies position during placement of the individual assemblies into the slots.

11. (PREVIOUSLY PRESENTED) Apparatus as in claim 10 wherein the lockable compliant support in the locked mode fixes the tool relative to the robot arm for at least one of loading, pickup, and carrying of the individual assemblies by the tool prior to placement of the individual assemblies into the rack.

12. (NEW) A robot rack loading apparatus for temporary rack storage of vehicular panel assemblies, the apparatus comprising:

a rack for storage of multiple panel assemblies, the rack including side and bottom plastic dunnage molded to the rack, the side and bottom dunnage having slots for receiving individual assemblies;

a tool mountable on a robot arm and adapted for sequentially carrying individual assemblies for loading into the rack; and

a lockable compliant support between the robot arm and the tool, the lockable compliant support having a compliant mode and a locked mode, wherein the tool moves relative to the robot arm in the compliant mode in response to self-adjustment of the individual assemblies position during placement of the individual assemblies into the slots.